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LAW OFFICES OF BARRY N. YOUNG
260 SHERIDAN AVENUE
SUITE 410
PALO ALTO, CA 94306-2047

EXAMINER

LIYOU, JONATHAN

ART UNIT PAPER NUMBER

2616

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/051,093 | Applicant(s) LOLAYEKAR ET AL. | |
| | Examiner Jonathan Liou | Art Unit 2663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-43 is/are allowed.
- 6) ☒ Claim(s) 1-38 and 44-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01/18/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4, 6, 8, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujisawa et al. (US Pat No. 6,785,290.)

Regarding claim 1, Fujisawa et al. discloses a method for use by a switch in a storage network (See Fig. 4.), the method comprising:

(a) receiving a plurality of packets by the switch, wherein the plurality of packets includes data packets and non-data packets; and (receiving plurality of cells , which includes data and non-data cells. See col 3, lines 49-55.)

(b) communicating the non-data packets to a first device and the data packet to a second device (See col 3-4, non-data packets is sent to CPU and data packet is sent to output. See col 3-4, lines 56-6.)

Regarding claim 2, Fujisawa et al. disclose the data packets form a data request, wherein the data request includes at least some of the group including a read command, a write command, ready-for-transfer indicator, read data, write data, and a response indicator (See col 2, lines 45-54.)

Regarding claim 4, Fujisawa et al. teach the first device would be a host CPU
(col 3, lines 61-64.)

Regarding claim 6, Fujisawa et al. teach the second device, which is a scheduler-
processing unit (See Fig. 4 and Col 9, lines 8-12.)

Regarding claim 8, Fujisawa et al. teach the second device is external to the
switch (See Fig. 4)

Regarding claim 15, Fujisawa et al. teach the storage processor in the switch
(See Fig. 4)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Fujisawa et al. (US Pat No. 6,785,290.), in view of Kadambi et al. (US Pat No.
6,993,027.)

Regarding claim 3, Fujisawa et al. teach data request could have read command
(See col 2, lines 45-54, Fujisawa.) Fujisawa does not teach the type of indicator.
However, Kadambi et al. teach method for send a switch indicator in a network switch
could be PDU for receiving and transmitting(See col 67, lines 3-18.) Since Kadmbi et
al. teach the packet data is transfer the data packet by the scheduler (See col 65, lines

61-3.) and the structure of Kadmbi et al. is a network storage area similarly to Fujisawa et al. , it would have been obvious to one who has ordinary skill in the art at the time the invention was made to use PDU as the indicator because it would be able to identify the packet status.

5. Claims 5, 7, 9-12,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa et al. (US Pat No. 6,785,290.)

Regarding claim 5, Fujisawa et al. teach the first and second devices . Fujisawa et al. does not teach the system to be included in the switch. In general, it would be obvious to implement the device internal or external of switch merely depend upon the chip design requirements. Therefore, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to put the devices internal or external of the switch because the storage area network could be possible to perform these task in local network system.

Regarding claim 7, Fujisawa et al. teach second devices. Fujisawa et al. do not specifically teach the second device is a fabric. However, it is well known the scheduler in the switch could be used as fabric based. Therefore, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to have Fabric because it would have been used often in LAN system.

Regarding claim 9-11, Fujisawa et al. teach method of 1, it does not specifically teach the types of data packet and information in the a local header. However, it would have been obvious the packets is often routing to different nodes, it has to have connection and recognized protocol in order to read; hence, those information is being

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read, which is a read command. Further header includes all of routing index and control information is well known in the art. Therefore, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to describe the type of packet data and header includes the control information. In addition, Fujisawa et al. teach routing switch to output and input packets (col 5, lines 9-54.)

Regarding claim 12, Fujisawa et al. teach the method of claim 1. Fujisawa et al. teach do not specifically teach the virtualization function prior to communicating the data packets to a second device. However, it would have been obvious for one to send the data according the virtualization prior to send the data because the user need to figure out what data should be sent. Therefore, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to have virtualization function prior to communicating the data packets to a second device because virtualization function is often used in the packet switching system and acts as awareness function prior sending packets.

Regarding claim 14, Fujisawa et al. teach the steps (a) and (b). Although Fujisawa et al. does not specifically teach steps (a) and (b) are performed at wire speed, Fujisawa et al. teach the system based on ATM, which often transfer the packet data at wired speed. Therefore, it would have been obvious for one to transfer the packet data at wire speed because the system of Fujisawa et al. is a wire line connection based and ATM system (See Fig. 4)

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6. Claims 13, 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa et al. (US Pat No. 6,785,290.), in view of Szczepanek et al. (US Pat No. 6,621,818.)

Regarding claim 13, Fujisawa et al. teach the steps (a) and (b) in claim 1. Fujisawa et al. does not teach performing those steps with buffering. However, Szczepanek et al. teach the buffering could be controlled depend on the sufficiency of the bandwidth (See col 10, lines 5-15, Szczepanek et al.) Since Szczepanek et al. teach receive the packet transferring in the packet data network traffic, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to perform classification packet without buffering because Szczepanek et al. teach if the bandwidth is sufficient; then, the buffering could be ignored (See col 10, lines 5-15, Szczepanek et al.)

Regarding claims 16, the limitations set forth are similar to claim 13; thus, the same rationale and basis as applied to claim 13 are applied.

Regarding claim 20, the scheduler, as the second device, communicates with data packet (see Fig. 4, Fujisawa et al.)

Regarding claims 17-19, 21-23, the limitations set forth are similar to claims 2, 9-10, 12, 14-15; thus, the same rationale and basis as applied to claims 2, 9-10, 12, 14-15 are applied.

7. Claims 24-30, 44-49, 50-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. (US Pat No. 6,647,019), in view of Fujisawa et al.

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(US Pat No. 6,785,290.), and further in view of Szczepanek et al. (US Pat No. 6,621,818.)

Regarding claims 24, 44, 50, 54, Mckeown et al. teach a method for use in a storage network (Fig. 3, Mckeown et al.) Mckeown et al. teach receiving a plurality of packet by a linecard in the system and identifying the data packet on the linecard (See col 6, lines 64-66, Mckeown et al.) Mckeown et al. does not teach classifying the packet into data and non-data packet, and performing without buffering. However, Fujisawa et al. teach classifying the packet into data and non-data packet, forwarding non-data packet to CPU, forwarding data packet to scheduler for further processing (See Fig. 4, and col 3-4, lines 50-8.) Szczepanek et al. teach the buffering could be controlled depend on the sufficiency of the bandwidth (See col 10, lines 5-15, Szczepanek et al.) Fujisawa et al. teach the scheduler performs the classifying (See Fig. 4, Fujisawa et al.) and Mckeown et al. show the scheduler in the system (See Fig. 3, Mckeown et al.). In addition, Szczepanek et al. teach receive the packet transferring in the packet data network traffic, which would be implement on the packet switch system of Mckeown et al., in view of Mckeown et al.. Thus, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to have a system includes a linecard in the switch to perform classifying data packet into the different processing.

Regarding claims 25-30, the limitations set forth are similar to claims 2, 5, 8, 12, 14-15; thus, the same rationale and basis as applied to claims 2, 5, 8, 12, 14-15 are applied.

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Regarding claims 45-49, the limitations set forth are similar to claims 11, 15, 18, 26-27; thus, the same rationale and basis as applied to claims 11, 15, 18, 26-27 are applied.

Regarding claims 51-53, the limitations set forth are similar to claims 9-10, 26-27; thus, the same rationale and basis as applied to claims 9-10, 26-27 are applied.

Regarding claims 55-56, 58-61, the limitations set forth are similar to claims 9-10, 12 and 14-15; thus, the same rationale and basis as applied to claims 9-10, 12, 14-15 are applied.

Regarding claims 57, McKeown et al., in view of Fujisawa et al., and further in view of Szczepanek et al. teach the switch of claim 54. Their structure does not specifically teach the control packet is any other than TCP packet, iSCSI PDU or FCP frame. However, the TCP and PDU packet are broadly representing almost all types of IP data packet. Thus, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to distinguish the control packet from TCP and PDU type packets because TCP and PDU type could broadly include all data packets.

8. Claims 31, 33-38 and 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. (US Pat No. 6,647,019), in view of Fukushima et al. (US Pat No. 6,292,489.), and further in view of Fujisawa et al. (US Pat No. 6,785,290.)

Regarding claims 31 and 62, McKeown et al. receiving a plurality of packets by a linecard in the storage network (See Fig. 3) and identifying the data packet on the linecard (See col 6, lines 64-66, McKeown et al.) McKeown et al. does not specifically teach classifying the data packet and control packet and send control packet to a CPU

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and data packet to other processor. However, Fukushima et al. teach classifying the data packet and control packet (See col 9, lines 33-49, Fukushima et al.) Fujisawa et al. further teach sending the non-data packet, which would be control packet, to CPU and send data packet to other processor for further processing (See Fig. 4) Therefore, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to perform classifying the packets into different processing because the receiving packet has to classify the data packet and control packet in order for routing the data packet to the specific destination with required service as providing in the control packet, and in general the control packet is not sent to the destination because it only manage the class of packet, such as quality of service.

Regarding claims 33-38, 63, the limitations set forth are similar to claims 10-11, 26-27, 29-30; thus, the same rationale and basis as applied to claims 10-11, 26-27, 29-30 are applied.

9. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. (US Pat No. 6,647,019), in view of Fukushima et al. (US Pat No. 6,292,489.), in view of Fujisawa et al. (US Pat No. 6,785,290.), and further in view of Szczepanek et al. (US Pat No. 6,621,818.)

Regarding claims 32, McKeown et al., in view of Fukushima et al., in view of Fujisawa et al. teach the method of claim 31. Their structure do not teach the system without buffering; however, Szczepanek et al. teach the buffering could be controlled depend on the sufficiency of the bandwidth (See col 10, lines 5-15, Szczepanek et al.) Since Szczepanek et al. teach receive the packet transferring in the packet data

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network traffic, it would have been obvious to one who has ordinary skill in the art at the time the invention was made to perform classification packet without buffering because Szczepanek et al. teach if the bandwidth is sufficient; then, the buffering could be ignored (See col 10, lines 5-15, Szczepanek et al.)

Allowable Subject Matter

10. Claims 39-43 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art fail to teach determining if the packet is a TCP packet or an FC frame and if the packet is for an established connection; if the packet is for an established connection and is a TCP packet, determining if the packet includes an iSCSI PDU; if the packet includes an iSCSI PDU, determining if the PDU is a data moving PDU; if the packet is for an established connection and is an FC frame, determining if the frame is a data moving frame; if the packet is a data moving PDU or a data moving frame, then classifying the packet as a data packet, otherwise classifying the packet as a control packet recited in claim 39.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Liou whose telephone number is 571-272-8136. The examiner can normally be reached on 8:00AM - 5:00PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jonathan Liou

3/20/2006


RICKY Q. NGO
SUPERVISORY PATENT EXAMINER